CLAIMS

1/ A method of operating a transmitting/receiving station (3) of a wireless communication network in antenna diversity mode, this station having a plurality of reception antennas (4), characterized in that it consists in:

- listening (11, 24) to the communications between two other transmitting/receiving stations (1, 2) of the network, successively on each reception antenna,
- analysing the quality of listening (12, 25, 26) on each reception antenna so as to identify a reception antenna from among the plurality of reception antennas which sets up the best communication link with one of the said other two transmitting/receiving stations.

2/ The method according to claim 1, characterized in that one of the two other transmitting/receiving stations (1, 2) of the network is an access point of the network

3/ The method according to any of claims 1 and 2, characterized in that the analysis of the quality of listening is validated on reception of an acknowledgement frame.

4/ The method according to any of claims 1 to 3, characterized in that the analysis of the quality of listening is based on a measurement (12) of the power of the signal in terms of reception of frames (DATA) originating from the said other stations.

5/ The method according to any of claims 1 to 4, characterized in that the analysis of the quality of listening is based on a comparison (25, 26) of the data of a frame (DATA) originating from the said other stations with predetermined data.

6/ The method according to claim 4, characterized in that the analysis of the quality of listening is based on a combination of a measurement (36) of the power of the signal in terms of reception of frames (DATA) originating from the said other stations and of a comparison (35) of preamble with predetermined data for a first tested antenna and on a measurement (12) of the power of the

signal in terms of reception of frames (DATA) originating from the said other stations for second antennas to be tested.

7/ The method according to claim 6, characterized in that the first tested antenna is the antenna whose said associated combination of measurements is the oldest one.

8/ The method according to any of claims 6 and 7, characterized in that said comparison is a correlation measurement.

9/ A transmitting/receiving station having a plurality of reception antennas (4) for operating in antenna diversity mode in a wireless communication network, characterized in that it comprises:

- means for listening (11, 24) to the communications between two other transmitting/receiving stations (1, 2) of the network, successively on each reception antenna,
- means for analysing the quality of listening (12, 25, 26) on each reception antenna so as to identify a reception antenna from among the plurality of reception antennas which sets up the best communication link with one of the said other two transmitting/receiving stations.

10/ The station according to claim 9, characterized in that one of the two other transmitting/receiving stations (1, 2) of the network is an access point of the network.

11/ The station according to any of claims 9 and 10, characterized in that the analysis of the quality of listening is validated on reception of an acknowledgement frame.

12/ The station according to any of claims 9 to 11 characterized in that the analysis of the quality of listening is based on a measurement (12) of the power of the signal in terms of reception of frames (DATA) originating from the said other stations.

13/ The station according to any of claims 9 to 12, characterized in that

the analysis of the quality of listening is based on a comparison (25, 26) of the data of a frame (DATA) originating from the said other stations with predetermined data.

14/ The station according to claim 12, characterized in that the analysis of the quality of listening is based on a combination of a measurement (36) of the power of the signal in terms of reception of frames (DATA) originating from the said other stations and of a comparison (35) of preamble with predetermined data for a first tested antenna and on a measurement (12) of the power of the signal in terms of reception of frames (DATA) originating from the said other stations for second antennas to be tested.

15/ The station according to claim 14, characterized in that the first tested antenna is the antenna whose said associated combination of measurements is the oldest one.

16/ The station according to any of claims 14 and 15, characterized in that said comparison is a correlation measurement.

17/ A wireless communication network characterized it comprises one or more stations according to one of claims 9 to 16.